B0443

Rotational comparison between double bundle ACL reconstruction and single bundle ACL reconstruction combine with antero lateral ligament (ALL) reconstruction

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Purpose: The purpose of this study was to compare the knee rotation of the ACL reconstructed knee between double bundle ACL reconstruction and Single bundle ACL reconstruction combine with ALL reconstruction.
Methods: Ten single bundle ACL reconstructions combine with ALL reconstructions and ten double bundle ACL reconstructions were performed randomized. Magnetic Resonance Imaging TTTG was measured in all cases before surgery and three months after surgery.
Results: On average changes in TTTG before and after surgery were 3.8 mm in single bundle ACL reconstruction with ALL reconstruction group and 3.3 mm in double bundle ACL reconstruction group, there was no significantly statistic difference.
Conclusions: Double bundle ACL reconstruction might be superior to prevent internal rotation of the knee. Improved quality of future study would allow better outcome.
http://dx.doi.org/10.1016/j.asmart.2016.07.094

B0449

Treatment of acromioclavicular dislocation with suture anchor on coracoid process

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Introduction: Treatment of acromioclavicular dislocation is still controversial. Here we reported a novel method for coracoclavicular fixation with a suture anchor inserted into coracoid process.
Methods: The surgical procedures are as the following: after insertion of a double loaded suture anchor into coracoid process, one tail of the suture stands are passed underneath the coracoid process to one side, and the other tail of the suture stands are passed to the other side. Then these 2 stands are passed through the clavicle to reproduce conoid and trapezoid part of the coracoclavicular ligament anatomically. In acute cases, the torn acromioclavicular ligaments are repaired. In chronic cases, the coracoacromial ligaments are reconstructed with palmaris longus.
Results: There were 5 patients (3 were acute and 2 were chronic) received the above procedures for their dislocated acromioclavicular joints. One acutely dislocated patient got her acromioclavicular joint redislocated 2 weeks after surgery due to poor protection. All the other 4 patients had good results with reduced acormioclvicular joints and unlimited activities of daily living.
Conclusion: Dislocation of acromioclavicular joint can be treated with suture anchor into coracoid process for coracoclavicular fixation.
http://dx.doi.org/10.1016/j.asmart.2016.07.095

B0456

Clinical Analysis of surgical techniques of approach of arthroscope approach of rotator cuff repair in 46 cases

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Objective: To discuss and evaluate the surgical techniques of approach of arthroscopic rotator cuff repair and its clinical result.
Methods: From January 2013 to December 2014,16 cases of rotaror cuff tear were treated by arthroscopic. Constant-Murley score and SST (simple shoulder test) questionnaire were adopted before operation and at the latest follow-up.
Results: All the 46 patients were available for follow-up for 7 to 29 months, he average follow-up period being 18 months. The pre-operation and post-operation mean ASES score was 72.3 vs. 87.1(P<0.01), with the mean VAS score for pain 5.1 vs. 2.7 (P<0.001), the mean forward flexion 173.3° vs. 150.3°(P<0.001), and the mean external rotation 28.5°vs. 45.2°(P<0.01). Constant-Murley score was 70.9 vs. 85.4 (P<0.01).
Conclusions: Arthroscopic rotator cuff repair is a successful treatment for rotator cuff tear. By the use of suture anchors, scope surgery shares the advantages of minimal morbidity and quick functional recovery. With appropriate indication control descent surgical skill and intense postoprehab, gratifying outcome can usually be anticipated.
http://dx.doi.org/10.1016/j.asmart.2016.07.096

B0459

The effect of total knee arthroplasty on active knee extension during treadmill walking

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Background: Fixed flexion contracture of the knee due to osteoarthritis is common in patients requiring a total knee arthroplasty (TKA). An inability to fully extend the knee is detrimental to overall knee function and increases energy expenditure during walking. Individuals may consciously limit extension during walking to minimize pain in the patellofemoral or tibiofemoral joints, avoid discomfort due to joint stiffness, or minimize joint instability. TKA is a well-established procedure for restoring extension to knees affected by fixed flexion contracture with residual post-operative contracture resolving in 2-3yrs. However, there is a suspicion that despite receiving a knee capable of achieving full extension, patients did not utilise this capability post-operatively. To address this gap in the current knowledge, the purpose of this study was to determine whether patients who receive full extension following a Total Knee Arthroplasty (TKA) at the end of the surgical procedure use the full range of motion achieved intraoperatively when they commence pain-free walking post-operatively.
Materials & Methods: Gait analysis of 24 patients undergoing unilateral TKR was conducted prior to surgery and repeated when they commenced pain-free locomotion. On attendance for gait analysis, retroreflective markers were attached to anatomical landmarks of the feet, lower limbs and pelvis (Cleveland Clinic marker set), supplemented by marker clusters attached to the middle of the thighs and calves. Following familiarisation trials, a high-speed optoelectronic camera system (200Hz, Vicon Bonita/Nexus, USA) was used to record maximum knee extension of the operated limb during standing and while prone (passive knee extension), step-descent onto the injured limb from a 20cm high step, as well as treadmill walking at both a self-selected comfortable speed and 130% of that speed for one minute each. Student t-tests were used to compare differences between pre-operative and post-operative values in the prone and standing trials. Two-way repeated-measures ANOVAs were conducted on the minimum flexion angle in the step-down and walking tasks, to determine if there were any differences over time, as well as any interaction between task and time.
Results: A sample of 6 males and 15 females were recruited, with an average period from surgery to follow-up of 4.6 ± 0.5 months. Intra-operative computer navigation results confirmed successful restoration of extension as a result of the TKR (post-operative median 0, IQR, -0.5 – 0.5°). Maximum extension improved significantly (P<0.05) between pre-operative and post-operative measurements during standing ($15.7 \pm 6.8°$ vs $7.5 \pm 6.4°$), prone ($14.5 \pm 6.3°$ vs $4.0 \pm 4.8°$), step-down ($19.1 \pm 7.3°$ vs $13.1 \pm 7.5°$), comfortable walk ($16.6 \pm 6.9°$ vs $8.4 \pm 6.3°$) and fast walk ($16.3 \pm 6.8°$ vs $7.8 \pm 5.9°$). There was no significant interaction between the effects of task and time for these functional tasks (F (1, 42) = 1.16, p = 0.284), suggesting that patients improved in a similar manner during all of these tasks.
Discussion: Patients improve their ability to extend the knee following a TKR procedure, reducing the flexion contracture observed compared to the pre-operative measurement. Nevertheless, during all tasks patients still do not utilise the full amount of extension that was restored during the operation. Furthermore, while patients possessed the ability to extend the knee to approximately 4° flexion in a prone position, during functional tasks patients produced an average minimum flexion angle of 8-13°. This suggests that there are neuromuscular restraints being placed on the knee joint movement and this abnormal function may be a result of movement strategies used by the patient, rather than any physical constraint. Future work will focus on interventions during post-operative rehabilitation to improve the utilisation of extension during locomotion with the ultimate goal of improved rehabilitation guidelines and protocols for therapists.
Conclusions: TKR patients utilise an improved amount of extension during static and functional tasks. The amount of improvement did not differ across the functional tasks. However, patients did not utilise the full amount of extension restored intra-operatively. These results highlight the importance of knee function during post-operative rehabilitation and may provide implications for improving the instruction of gait strategies during rehabilitation from TKR procedures.
http://dx.doi.org/10.1016/j.asmart.2016.07.097

B0466

Arthroscopic arthrodesis for ankle arthritis without bone graft

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Background: Ankle arthrodesis is considered by many to be the standard operative treatment for end-stage ankle arthritis. The purpose of this study was to perform the new technique application for ankle joint surface and determine the outcome for the union rates of ankle arthroscopic arthrodesis.
Methods: A total of 68 patients with posttraumatic arthritis, primary osteoarthritis, and rheumatoid arthritis were treated by ankle arthroscopic arthrodesis between May 2007 and December 2012. Our surgical indication was deformity less than 15 °measured by weight-bearing radiographs. Firstly, the remaining articular cartilage was removed with different curettes and shavers. Then the new technique (microfracture) was done at tibiotalar surfaces. Finally the ankle was fixed with two cannulated percutaneous screws. The wound healing, complications, postoperative radiographs, and American Orthopaedic Foot and Ankle Society (AOFAS) score were evaluated.
Results: The average follow-up time was 32 months (range 25-58 months). No bone grafting and a fusion rate of 100% was achieved. The average fusion time was 12.1 weeks. One patient developed superficial infection at two weeks and it was cured by non- surgical treatment. No deep infections, deep venous thrombosis, or revision surgery were observed. Screws had been removed in four patients because of prominence. One patient had fusion in the subtalar joint because of arthritis at 5 years postoperatively. At last follow-up, radiographic signs of developed or progressing arthritis were observed in 9 patients at subtalar joint and in 4 patients at talonavicular joint. At 1-year follow-up, the mean AOFAS ankle/hindfoot score had increased to 84 from a mean preoperative value of 38 (P<0.01).
Conclusions: Arthroscopic arthrodesis provides surgeons with an alternative to traditional open techniques for the management of severe ankle arthritis. Preparation of the joint surface with microfracture has been demonstrated to increase the union rate of arthroscopic ankle arthrodesis, while bone graft and other promoting substance are not necessary to be routinely used.
http://dx.doi.org/10.1016/j.asmart.2016.07.098